

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

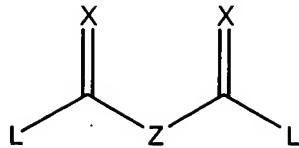
- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

We claim:

1. A compound represented by 1:



1

wherein

X represents independently for each occurrence O or S;

L represents independently for each occurrence -NH-O-Q, or -O-NH-Q;

Q represents independently for each occurrence acryloyl, 2-alkylacryloyl, 3-alkylacryloyl, 2,3-dialkylacryloyl, 3,3-dialkylacryloyl, 2,3,3-trialkylacryloyl, acryloylO(CR₂)_nC(O)-, 2-alkylacryloylO(CR₂)_nC(O)-, 3-alkylacryloylO(CR₂)_nC(O)-, 2,3-dialkylacryloylO(CR₂)_nC(O)-, 3,3-dialkylacryloylO(CR₂)_nC(O)-, 2,3,3-trialkylacryloylO(CR₂)_nC(O)-, (diene)C(O)-, (vinyl)(CR₂)_nC(O)-, or (vinyl)ArC(O)-;

R represents independently for each occurrence H or alkyl;

Z represents (CR₂)_n, (CR₂)_nJ(CR₂)_m, or (CR₂)_nAr(CR₂)_m;

Ar represents independently for each occurrence aryl or heteroaryl;

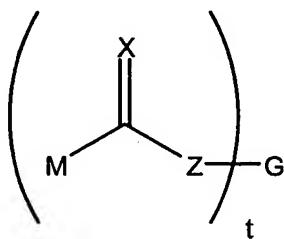
J represents independently for each occurrence O, S, NR, cycloalkyl, heterocyclyl, (CH₂CH₂O)_n, or (CH₂CH₂N(R))_n;

n represents independently for each occurrence an integer in the range 1-10; and

m represents independently for each occurrence an integer in the range 0-10.

2. The compound of claim 1, wherein X represents O.
3. The compound of claim 1, wherein L represents -NH-O-Q.
4. The compound of claim 1, wherein L represents -O-NH-Q.
5. The compound of claim 1, wherein Q represents acryloyl, or 2-methacryloyl.

6. The compound of claim 1, wherein R represents H.
7. The compound of claim 1, wherein Z represents $(CR_2)_n$.
8. The compound of claim 1, wherein X represents O; and L represents $-NH-O-Q$.
9. The compound of claim 1, wherein X represents O; and L represents $-O-NH-Q$.
10. The compound of claim 1, wherein X represents O; L represents $-NH-O-Q$; and Q represents acryloyl, or 2-methacryloyl.
11. The compound of claim 1, wherein X represents O; L represents $-O-NH-Q$; and Q represents acryloyl, or 2-methacryloyl.
12. The compound of claim 1, wherein X represents O; L represents $-NH-O-Q$; Q represents acryloyl, or 2-methacryloyl; and R represents H.
13. The compound of claim 1, wherein X represents O; L represents $-O-NH-Q$; Q represents acryloyl, or 2-methacryloyl; and R represents H.
14. The compound of claim 1, wherein X represents O; L represents $-NH-O-Q$; Q represents acryloyl, or 2-methacryloyl; R represents H; and Z represents $(CR_2)_n$.
15. The compound of claim 1, wherein X represents O; L represents $-O-NH-Q$; Q represents acryloyl, or 2-methacryloyl; R represents H; and Z represents $(CR_2)_n$.
16. A compound represented by 2:



2

wherein

X represents independently for each occurrence O or S;

M represents independently for each occurrence $-NH-O-Q$, or $-O-NH-Q$;

Q represents independently for each occurrence acryloyl, 2-alkylacryloyl, 3-alkylacryloyl, 2,3-dialkylacryloyl, 3,3-dialkylacryloyl, 2,3,3-trialkylacryloyl, acryloylO(CR₂)_nC(O)-, 2-alkylacryloylO(CR₂)_nC(O)-, 3-alkylacryloylO(CR₂)_nC(O)-, 2,3-dialkylacryloylO(CR₂)_nC(O)-, 3,3-dialkylacryloylO(CR₂)_nC(O)-, 2,3,3-trialkylacryloylO(CR₂)_nC(O)-, (diene)C(O)-, (vinyl)(CR₂)_nC(O)-, or (vinyl)ArC(O)-;

R represents independently for each occurrence H or alkyl;

Z represents (CR₂)_n, (CR₂)_nJ(CR₂)_m, or (CR₂)_nAr(CR₂)_m;

Ar represents independently for each occurrence aryl or heteroaryl;

J represents independently for each occurrence O, S, NR, cycloalkyl, heterocyclyl, (CH₂CH₂O)_n, or (CH₂CH₂N(R))_n;

G represents (CR_(4-t)), aryl, or heteroaryl;

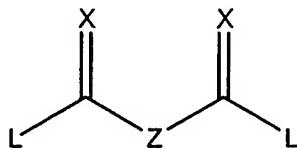
n represents independently for each occurrence an integer in the range 1-10; and

t represents 3 or 4.

17. The compound of claim 16, wherein X represents O.
18. The compound of claim 16, wherein M represents -NH-O-Q.
19. The compound of claim 16, wherein M represents -O-NH-Q.
20. The compound of claim 16, wherein Q represents acryloyl, or 2-methacryloyl.
21. The compound of claim 16, wherein R represents H.
22. The compound of claim 16, wherein X represents O; and M represents -NH-O-Q.
23. The compound of claim 16, wherein X represents O; and M represents -O-NH-Q.
24. The compound of claim 16, wherein X represents O; M represents -NH-O-Q; and Q represents acryloyl, or 2-methacryloyl.
25. The compound of claim 16, wherein X represents O; M represents -O-NH-Q; and Q represents acryloyl, or 2-methacryloyl.
26. The compound of claim 16, wherein X represents O; M represents -NH-O-Q; Q represents acryloyl, or 2-methacryloyl; and R represents H.

27. The compound of claim 16, wherein X represents O; M represents -O-NH-Q; Q represents acryloyl, or 2-methacryloyl; and R represents H.

28. A polymer, comprising a monomer represented by 1:



1

wherein

X represents independently for each occurrence O or S;

L represents independently for each occurrence -NH-O-Q, or -O-NH-Q;

Q represents independently for each occurrence acryloyl, 2-alkylacryloyl, 3-alkylacryloyl, 2,3-dialkylacryloyl, 3,3-dialkylacryloyl, 2,3,3-trialkylacryloyl, acryloylO(CR₂)_nC(O)-, 2-alkylacryloylO(CR₂)_nC(O)-, 3-alkylacryloylO(CR₂)_nC(O)-, 2,3-dialkylacryloylO(CR₂)_nC(O)-, 3,3-dialkylacryloylO(CR₂)_nC(O)-, 2,3,3-trialkylacryloylO(CR₂)_nC(O)-, (diene)C(O)-, (vinyl)(CR₂)_nC(O)-, or (vinyl)ArC(O)-;

R represents independently for each occurrence H or alkyl;

Z represents (CR₂)_n, (CR₂)_nJ(CR₂)_m, or (CR₂)_nAr(CR₂)_m;

Ar represents independently for each occurrence aryl or heteroaryl;

J represents independently for each occurrence O, S, NR, cycloalkyl, heterocyclyl, (CH₂CH₂O)_n, or (CH₂CH₂N(R))_n;

n represents independently for each occurrence an integer in the range 1-10; and

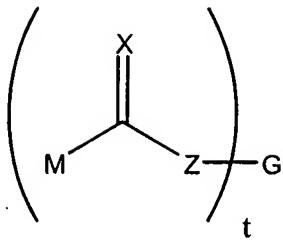
m represents independently for each occurrence an integer in the range 0-10.

29. The polymer of claim 28, wherein X represents O.

30. The polymer of claim 28, wherein L represents -NH-O-Q.

31. The polymer of claim 28, wherein L represents -O-NH-Q.

32. The polymer of claim 28, wherein Q represents acryloyl, or 2-methacryloyl.
33. The polymer of claim 28, wherein R represents H.
34. The polymer of claim 28, wherein Z represents $(CR_2)_n$.
35. The polymer of claim 28, wherein X represents O; and L represents -NH-O-Q.
36. The polymer of claim 28, wherein X represents O; and L represents -O-NH-Q.
37. The polymer of claim 28, wherein X represents O; L represents -NH-O-Q; and Q represents acryloyl, or 2-methacryloyl.
38. The polymer of claim 28, wherein X represents O; L represents -O-NH-Q; and Q represents acryloyl, or 2-methacryloyl.
39. The polymer of claim 28, wherein X represents O; L represents -NH-O-Q; Q represents acryloyl, or 2-methacryloyl; and R represents H.
40. The polymer of claim 28, wherein X represents O; L represents -O-NH-Q; Q represents acryloyl, or 2-methacryloyl; and R represents H.
41. The polymer of claim 28, wherein X represents O; L represents -NH-O-Q; Q represents acryloyl, or 2-methacryloyl; R represents H; and Z represents $(CR_2)_n$.
42. The polymer of claim 28, wherein X represents O; L represents -O-NH-Q; Q represents acryloyl, or 2-methacryloyl; R represents H; and Z represents $(CR_2)_n$.
43. The polymer of any of claims 28-42, further comprising a second monomer selected from the group consisting of acrylic acids, acrylates, and acrylamides.
44. The polymer of claim 43, wherein said second monomer is acrylic acid, 2-hydroxyethyl acrylate, oligo(ethylene glycol) 2-methacrylate, acrylamide, N,N-dimethylacrylamide, or N-(tris(hydroxymethyl)methyl)acrylamide.
45. A polymer, comprising a monomer represented by 2:



2

wherein

X represents independently for each occurrence O or S;

M represents independently for each occurrence -NH-O-Q, or -O-NH-Q;

Q represents independently for each occurrence acryloyl, 2-alkylacryloyl, 3-alkylacryloyl, 2,3-dialkylacryloyl, 3,3-dialkylacryloyl, 2,3,3-trialkylacryloyl, acryloylO(CR₂)_nC(O)-, 2-alkylacryloylO(CR₂)_nC(O)-, 3-alkylacryloylO(CR₂)_nC(O)-, 2,3-dialkylacryloylO(CR₂)_nC(O)-, 3,3-dialkylacryloylO(CR₂)_nC(O)-, 2,3,3-trialkylacryloylO(CR₂)_nC(O)-, (diene)C(O)-, (vinyl)(CR₂)_nC(O)-, or (vinyl)ArC(O)-;

R represents independently for each occurrence H or alkyl;

Z represents (CR₂)_n, (CR₂)_nJ(CR₂)_m, or (CR₂)_nAr(CR₂)_m;

Ar represents independently for each occurrence aryl or heteroaryl;

J represents independently for each occurrence O, S, NR, cycloalkyl, heterocyclyl, (CH₂CH₂O)_n, or (CH₂CH₂N(R))_n;

G represents (CR₂)_n, aryl, or heteroaryl;

n represents independently for each occurrence an integer in the range 1-10; and

t represents 3 or 4.

46. The polymer of claim 45, wherein X represents O.
47. The polymer of claim 45, wherein M represents -NH-O-Q.
48. The polymer of claim 45, wherein M represents -O-NH-Q.
49. The polymer of claim 45, wherein Q represents acryloyl, or 2-methacryloyl.

50. The polymer of claim 45, wherein R represents H.
51. The polymer of claim 45, wherein X represents O; and M represents -NH-O-Q.
52. The polymer of claim 45, wherein X represents O; and M represents -O-NH-Q.
53. The polymer of claim 45, wherein X represents O; M represents -NH-O-Q; and Q represents acryloyl, or 2-methacryloyl.
54. The polymer of claim 45, wherein X represents O; M represents -O-NH-Q; and Q represents acryloyl, or 2-methacryloyl.
55. The polymer of claim 45, wherein X represents O; M represents -NH-O-Q; Q represents acryloyl, or 2-methacryloyl; and R represents H.
56. The polymer of claim 45, wherein X represents O; M represents -O-NH-Q; Q represents acryloyl, or 2-methacryloyl; and R represents H.
57. The polymer of any of claims 45-56, further comprising a second monomer selected from the group consisting of acrylic acids, acrylates, and acrylamides.
58. The polymer of claim 57, wherein said second monomer is acrylic acid, 2-hydroxyethyl acrylate, oligo(ethylene glycol) 2-methacrylate, acrylamide, N,N-dimethylacrylamide, or N-(tris(hydroxymethyl)methyl)acrylamide.
59. A crosslinked gel, comprising a hydrophobic polymer; and a crosslinker selected from the group consisting of a compound of any of claims 1-27.
60. The crosslinked gel of claim 59, wherein said hydrophobic polymer comprises an alkyl acrylate, alkyl alkylacrylate, alkyl acrylamide, or alkyl alkylacrylamide.
61. The crosslinked gel of claim 59, wherein said hydrophobic polymer comprises an alkyl methacrylate.
62. The crosslinked gel of claim 59, wherein said hydrophobic polymer comprises methyl methacrylate, ethyl methacrylate, n-butyl methacrylate, or tert-butyl methacrylate.
63. A crosslinked hydrogel, comprising a hydrophilic polymer; and a crosslinker selected from the group consisting of a compound of any of claims 1-27.

64. The crosslinked hydrogel of claim 63, wherein said hydrophilic polymer comprises an acrylic acid, acrylate, or acrylamide.

65. The crosslinked hydrogel of claim 63, wherein said hydrophilic polymer comprises acrylic acid, 2-hydroxyethyl acrylate, oligo(ethylene glycol) 2-methacrylate, acrylamide, N,N-dimethylacrylamide, or N-(tris(hydroxymethyl)methyl)acrylamide.

66. The crosslinked hydrogel of claim 63, wherein said hydrophilic polymer consists of a first acrylamide and a second acrylamide.

67. The crosslinked hydrogel of claim 66, wherein said first acrylamide is acrylamide or N,N-dimethylacrylamide.

68. The crosslinked hydrogel of claim 66, wherein said second acrylamide is N-(tris(hydroxymethyl)methyl)acrylamide.

69. The crosslinked hydrogel of claim 66, wherein said first acrylamide is acrylamide or N,N-dimethylacrylamide; and said second acrylamide is N-(tris(hydroxymethyl)methyl)acrylamide.

70. The crosslinked hydrogel of claim 66, wherein said hydrophilic polymer consists of an acrylamide and an acrylate.

71. The crosslinked hydrogel of claim 70, wherein said acrylamide is acrylamide or N,N-dimethylacrylamide.

72. The crosslinked hydrogel of claim 70, wherein said acrylate is acrylic acid, 2-hydroxyethyl acrylate, or oligo(ethylene glycol) 2-methacrylate.

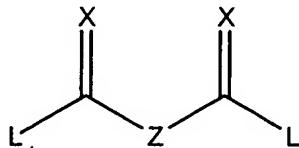
73. The crosslinked hydrogel of claim 70, wherein said acrylamide is acrylamide or N,N-dimethylacrylamide; and said acrylate is acrylic acid, 2-hydroxyethyl acrylate, or oligo(ethylene glycol) 2-methacrylate.

74. The crosslinked hydrogel of claim 63, wherein said hydrophilic polymer consists of a first acrylate and a second acrylate.

75. The crosslinked hydrogel of claim 74, wherein said first acrylate is acrylic acid, 2-hydroxyethyl acrylate, or oligo(ethylene glycol) 2-methacrylate.

76. The crosslinked hydrogel of claim 74, wherein said first acrylate is acrylic acid, 2-hydroxyethyl acrylate, or oligo(ethylene glycol) 2-methacrylate; and said second acrylate is acrylic acid, 2-hydroxyethyl acrylate, or oligo(ethylene glycol) 2-methacrylate.

77. A method of preparing a compound represented by 1:



1

wherein

X represents independently for each occurrence O or S;

L represents independently for each occurrence -NH-O-Q, or -O-NH-Q;

Q represents independently for each occurrence acryloyl, 2-alkylacryloyl, 3-alkylacryloyl, 2,3-dialkylacryloyl, 3,3-dialkylacryloyl, 2,3,3-trialkylacryloyl, acryloylO(CR₂)_nC(O)-, 2-alkylacryloylO(CR₂)_nC(O)-, 3-alkylacryloylO(CR₂)_nC(O)-, 2,3-dialkylacryloylO(CR₂)_nC(O)-, 3,3-dialkylacryloylO(CR₂)_nC(O)-, 2,3,3-trialkylacryloylO(CR₂)_nC(O)-, (diene)C(O)-, (vinyl)(CR₂)_nC(O)-, or (vinyl)ArC(O)-;

R represents independently for each occurrence H or alkyl;

Z represents (CR₂)_n, (CR₂)_nJ(CR₂)_m, or (CR₂)_nAr(CR₂)_m;

Ar represents independently for each occurrence aryl or heteroaryl;

J represents independently for each occurrence O, S, NR, cycloalkyl, heterocyclyl, (CH₂CH₂O)_n, or (CH₂CH₂N(R))_n;

n represents independently for each occurrence an integer in the range 1-10; and

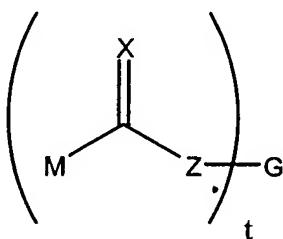
m represents independently for each occurrence an integer in the range 0-10;

comprising:

a) reacting at least 2 molar equivalents of a hydroxylamine with a diester or 2 molar equivalents of an acrylic ester, thereby forming a dihydroxamic acid or 2 moles of a hydroxamic acrylamide, respectively; and

b) reacting said dihydroxamic acid with at least 2 molar equivalents of an acryloyl halide; or reacting said 2 moles of a hydroxamic acrylamide with one molar equivalent of an adipoyl chloride.

78. A method of preparing a compound represented by 2:



2

wherein

X represents independently for each occurrence O or S;

M represents independently for each occurrence -NH-O-Q, or -O-NH-Q;

Q represents independently for each occurrence acryloyl, 2-alkylacryloyl, 3-alkylacryloyl, 2,3-dialkylacryloyl, 3,3-dialkylacryloyl, 2,3,3-trialkylacryloyl, acryloylO(CR₂)_nC(O)-, 2-alkylacryloylO(CR₂)_nC(O)-, 3-alkylacryloylO(CR₂)_nC(O)-, 2,3-dialkylacryloylO(CR₂)_nC(O)-, 3,3-dialkylacryloylO(CR₂)_nC(O)-, 2,3,3-trialkylacryloylO(CR₂)_nC(O)-, (diene)C(O)-, (vinyl)(CR₂)_nC(O)-, or (vinyl)ArC(O)-;

R represents independently for each occurrence H or alkyl;

Z represents (CR₂)_n, (CR₂)_nJ(CR₂)_m, or (CR₂)_nAr(CR₂)_m;

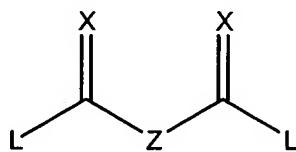
Ar represents independently for each occurrence aryl or heteroaryl;

J represents independently for each occurrence O, S, NR, cycloalkyl, heterocyclyl, (CH₂CH₂O)_n, or (CH₂CH₂N(R))_n;

G represents (CR₂)_n, aryl, or heteroaryl;

n represents independently for each occurrence an integer in the range 1-10; and
t represents 3 or 4;
comprising:
a) reacting at least 3 molar equivalents of a hydroxylamine with either a triester, a tetraester, or with at least 3 equivalents of an acrylic ester, thereby forming a trihydroxamic acid, a tetrahydroxamic acid, or at least 3 moles of a hydroxamic acrylamide; and
b) reacting said trihydroxamic or tetrahydroxamic acid with at least 3 molar equivalents of an acryloyl halide, or reacting said at least 3 moles of a hydroxamic acrylamide with one molar equivalent of a triacyl halide.

79. A method of preparing a polymer comprising a monomer represented by 1:



1

wherein

X represents independently for each occurrence O or S;

L represents independently for each occurrence -NH-O-Q, or -O-NH-Q;

Q represents independently for each occurrence acryloyl, 2-alkylacryloyl, 3-alkylacryloyl, 2,3-dialkylacryloyl, 3,3-dialkylacryloyl, 2,3,3-trialkylacryloyl, acryloylO(CR₂)_nC(O)-, 2-alkylacryloylO(CR₂)_nC(O)-, 3-alkylacryloylO(CR₂)_nC(O)-, 2,3-dialkylacryloylO(CR₂)_nC(O)-, 3,3-dialkylacryloylO(CR₂)_nC(O)-, 2,3,3-trialkylacryloylO(CR₂)_nC(O)-, (diene)C(O)-, (vinyl)(CR₂)_nC(O)-, or (vinyl)ArC(O)-;

R represents independently for each occurrence H or alkyl;

Z represents (CR₂)_n, (CR₂)_nJ(CR₂)_m, or (CR₂)_nAr(CR₂)_m;

Ar represents independently for each occurrence aryl or heteroaryl;

J represents independently for each occurrence O, S, NR, cycloalkyl, heterocyclyl, $(\text{CH}_2\text{CH}_2\text{O})_n$, or $(\text{CH}_2\text{CH}_2\text{N}(\text{R}))_n$;

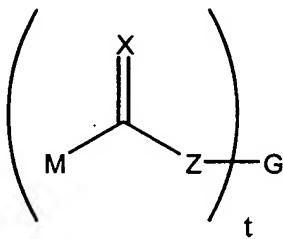
n represents independently for each occurrence an integer in the range 1-10; and

m represents independently for each occurrence an integer in the range 0-10;

comprising:

a) reacting a monomer represented by 1 with a second monomer in the presence of an initiator.

80. A method of preparing a polymer comprising a monomer represented by 2:



2

wherein

X represents independently for each occurrence O or S;

M represents independently for each occurrence $-\text{NH}-\text{O}-\text{Q}$, or $-\text{O}-\text{NH}-\text{Q}$;

Q represents independently for each occurrence acryloyl, 2-alkylacryloyl, 3-alkylacryloyl, 2,3-dialkylacryloyl, 3,3-dialkylacryloyl, 2,3,3-trialkylacryloyl, acryloylO(CR_2)_nC(O)-, 2-alkylacryloylO(CR_2)_nC(O)-, 3-alkylacryloylO(CR_2)_nC(O)-, 2,3-dialkylacryloylO(CR_2)_nC(O)-, 3,3-dialkylacryloylO(CR_2)_nC(O)-, 2,3,3-trialkylacryloylO(CR_2)_nC(O)-, (diene)C(O)-, (vinyl)(CR_2)_nC(O)-, or (vinyl)ArC(O)-;

R represents independently for each occurrence H or alkyl;

Z represents $(\text{CR}_2)_n$, $(\text{CR}_2)_n\text{J}(\text{CR}_2)_m$, or $(\text{CR}_2)_n\text{Ar}(\text{CR}_2)_m$;

Ar represents independently for each occurrence aryl or heteroaryl;

J represents independently for each occurrence O, S, NR, cycloalkyl, heterocyclyl, $(\text{CH}_2\text{CH}_2\text{O})_n$, or $(\text{CH}_2\text{CH}_2\text{N}(\text{R}))_n$;

G represents $(CR_{(4-t)})$, aryl, or heteroaryl;

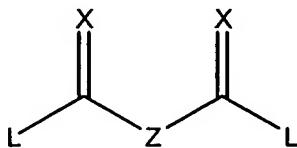
n represents independently for each occurrence an integer in the range 1-10; and

t represents 3 or 4;

comprising:

a) reacting a monomer represented by 2 with a second monomer in the presence of an initiator.

81. A method of preparing a crosslinked gel, comprising a hydrophobic polymer, and a crosslinker represented by 1:



1

wherein

X represents independently for each occurrence O or S;

L represents independently for each occurrence -NH-O-Q, or -O-NH-Q;

Q represents independently for each occurrence acryloyl, 2-alkylacryloyl, 3-alkylacryloyl, 2,3-dialkylacryloyl, 3,3-dialkylacryloyl, 2,3,3-trialkylacryloyl, acryloylO(CR_2)_nC(O)-, 2-alkylacryloylO(CR_2)_nC(O)-, 3-alkylacryloylO(CR_2)_nC(O)-, 2,3-dialkylacryloylO(CR_2)_nC(O)-, 3,3-dialkylacryloylO(CR_2)_nC(O)-, 2,3,3-trialkylacryloylO(CR_2)_nC(O)-, (diene)C(O)-, (vinyl)(CR_2)_nC(O)-, or (vinyl)ArC(O)-;

R represents independently for each occurrence H or alkyl;

Z represents $(CR_2)_n$, $(CR_2)_nJ(CR_2)_m$, or $(CR_2)_nAr(CR_2)_m$;

Ar represents independently for each occurrence aryl or heteroaryl;

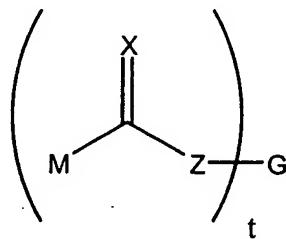
J represents independently for each occurrence O, S, NR, cycloalkyl, heterocyclyl, $(CH_2CH_2O)_n$, or $(CH_2CH_2N(R))_n$;

n represents independently for each occurrence an integer in the range 1-10; and

m represents independently for each occurrence an integer in the range 0-10;
comprising:

a) reacting a monomer represented by 1 with a hydrophobic monomer in the presence of an initiator.

82. A method of preparing a crosslinked gel comprising a hydrophobic polymer and a crosslinker represented by 2:



2

wherein

X represents independently for each occurrence O or S;

M represents independently for each occurrence -NH-O-Q, or -O-NH-Q;

Q represents independently for each occurrence acryloyl, 2-alkylacryloyl, 3-alkylacryloyl, 2,3-dialkylacryloyl, 3,3-dialkylacryloyl, 2,3,3-trialkylacryloyl, acryloylO(CR₂)_nC(O)-, 2-alkylacryloylO(CR₂)_nC(O)-, 3-alkylacryloylO(CR₂)_nC(O)-, 2,3-dialkylacryloylO(CR₂)_nC(O)-, 3,3-dialkylacryloylO(CR₂)_nC(O)-, 2,3,3-trialkylacryloylO(CR₂)_nC(O)-, (diene)C(O)-, (vinyl)(CR₂)_nC(O)-, or (vinyl)ArC(O)-;

R represents independently for each occurrence H or alkyl;

Z represents (CR₂)_n, (CR₂)_nJ(CR₂)_m, or (CR₂)_nAr(CR₂)_m;

Ar represents independently for each occurrence aryl or heteroaryl;

J represents independently for each occurrence O, S, NR, cycloalkyl, heterocyclyl, (CH₂CH₂O)_n, or (CH₂CH₂N(R))_n;

G represents (CR_(4-t)), aryl, or heteroaryl;

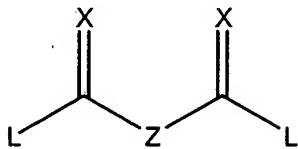
n represents independently for each occurrence an integer in the range 1-10; and

t represents 3 or 4;

comprising:

a) reacting a monomer represented by 2 with a hydrophobic monomer in the presence of an initiator.

83. A method of preparing a crosslinked hydrogel, comprising a hydrophilic polymer and a crosslinker represented by 1:



1

wherein

X represents independently for each occurrence O or S;

L represents independently for each occurrence -NH-O-Q, or -O-NH-Q;

Q represents independently for each occurrence acryloyl, 2-alkylacryloyl, 3-alkylacryloyl, 2,3-dialkylacryloyl, 3,3-dialkylacryloyl, 2,3,3-trialkylacryloyl, acryloylO(CR₂)_nC(O)-, 2-alkylacryloylO(CR₂)_nC(O)-, 3-alkylacryloylO(CR₂)_nC(O)-, 2,3-dialkylacryloylO(CR₂)_nC(O)-, 3,3-dialkylacryloylO(CR₂)_nC(O)-, 2,3,3-trialkylacryloylO(CR₂)_nC(O)-, (diene)C(O)-, (vinyl)(CR₂)_nC(O)-, or (vinyl)ArC(O)-;

R represents independently for each occurrence H or alkyl;

Z represents (CR₂)_n, (CR₂)_nJ(CR₂)_m, or (CR₂)_nAr(CR₂)_m;

Ar represents independently for each occurrence aryl or heteroaryl;

J represents independently for each occurrence O, S, NR, cycloalkyl, heterocyclyl, (CH₂CH₂O)_n, or (CH₂CH₂N(R))_n;

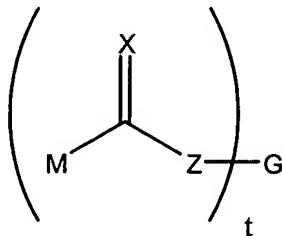
n represents independently for each occurrence an integer in the range 1-10; and

m represents independently for each occurrence an integer in the range 0-10;

comprising:

a) reacting a monomer represented by 1 with a hydrophilic monomer in the presence of an initiator.

84. A method of preparing a crosslinked hydrogel, comprising a hydrophilic polymer and a crosslinker represented by 2:



2

wherein

X represents independently for each occurrence O or S;

M represents independently for each occurrence -NH-O-Q, or -O-NH-Q;

Q represents independently for each occurrence acryloyl, 2-alkylacryloyl, 3-alkylacryloyl, 2,3-dialkylacryloyl, 3,3-dialkylacryloyl, 2,3,3-trialkylacryloyl, acryloylO(CR₂)_nC(O)-, 2-alkylacryloylO(CR₂)_nC(O)-, 3-alkylacryloylO(CR₂)_nC(O)-, 2,3-dialkylacryloylO(CR₂)_nC(O)-, 3,3-dialkylacryloylO(CR₂)_nC(O)-, 2,3,3-trialkylacryloylO(CR₂)_nC(O)-, (diene)C(O)-, (vinyl)(CR₂)_nC(O)-, or (vinyl)ArC(O)-;

R represents independently for each occurrence H or alkyl;

Z represents (CR₂)_n, (CR₂)_nJ(CR₂)_m, or (CR₂)_nAr(CR₂)_m;

Ar represents independently for each occurrence aryl or heteroaryl;

J represents independently for each occurrence O, S, NR, cycloalkyl, heterocyclyl, (CH₂CH₂O)_n, or (CH₂CH₂N(R))_n;

G represents (CR_(4-t)), aryl, or heteroaryl;

n represents independently for each occurrence an integer in the range 1-10; and

t represents 3 or 4;

comprising:

a) reacting a monomer represented by 1 with a hydrophilic monomer in the presence of an initiator.